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REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration and allowance of the subject application in reply to the Office Action mailed July 29, 2003. In the Office Action, the Examiner withdrew a restriction requirement and rejected all the claims 1-27 under 35 U.S.C. §103(a) as being obvious over U.S. Patent 6,010,618 (the "Lomas patent") in view of U.S. Patent 2,472,502 (the "Tyson patent"). The Examiner contends that one of ordinary skill in the art would have found it obvious to modify the Lomas apparatus to include multiple openings over the entire surface of the baffles because the Tyson patent illustrates that multiple openings in the baffles desirably improve the degree of stripping. Applicant respectfully traverses this rejection.

Applicant would like to express his gratitude to Examiners Arnold and Griffin for extending the courtesy of discussing the subject application in a telephonic interview on September 23, 2003. Applicant will endeavor to discuss those points which were brought out in the interview.

The Examiner contends that the motivation to spread out the openings on a sloped baffle of the Lomas patent is provided in the Tyson patent at column 1, line 50, to column 2, line 15 and 24-29. Applicant would like to respectfully point out that the Tyson patent is comparing using horizontal grated baffles in a stripping vessel versus using no baffles in a stripping vessel.

By providing the spaced annular perforated members or sections made of open mesh material such as subway grating, overall circulation of the catalyst in the stripping vessel 35 is minimized and substantially all of the contact particles pass down through one perforated member or section to the space therebelow, then through the next perforated member and to the space below that, etc., so that the contact particles all remain in the stripping section for about the same period of time and are all subjected to about the same amount of stripping. In this way, more efficient stripping is obtained than in strippers where no perforated partitions are used.

Tyson patent, column 6, lines 19-33 (emphasis added). Obviously, spreading many openings over the entire surface of a horizontal baffle in a stripping vessel is more efficient than just a few openings on a horizontal baffle because without the many, spread-out openings, fluidization of the top surface of the baffle would be insufficient.

The Lomas patent however concerns stripping baffles that are sloped. Before the present invention, it was perceived that the top surface of a sloped stripping baffle was sufficiently fluidized. A sloped stripping baffle was naturally thought to allow fluidizing gas to travel over the lower edge of the baffle and over the top surface of the baffle. Not until the inventor of the present invention conducted a cold flow modeling study to actually observe the interaction between catalyst and fluidizing gas on the top surface of

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sloped stripping baffles was it learned that stagnant zones of catalyst generate on the top surface of the baffle. Before the problem of insufficient fluidization on the top surface of sloped baffles was discovered, there was no motivation to improve fluidization by spreading out openings on the surface of a sloped baffle. The Tyson patent does not teach such a motivation because a horizontal baffle with few openings in a stripping vessel would obviously restrict passage of fluidizing gas to the top of the baffle and would practically block catalyst from passing through and below the baffle. Such a stripping device would be unworkable and never attempted. However, unworkability was never an issue with respect to sloped baffles because of the perception of sufficient fluidization even with only a few openings in the baffle which was typical before the present invention. Only when the inventors dispelled this misperception of sufficient fluidization of sloped baffles with a few openings could there be a motivation for the present invention. Accordingly, Applicant respectfully submits that the Tyson patent does not provide motivation to combine the teachings of gratings of the Tyson patent with the teachings of the sloped baffles of the Lomas patent.

The present invention also provides unexpectedly superior stripping efficiencies at high catalyst flux rates. Higher catalyst flux rates with concomitant higher stripping gas rates over horizontal grates as shown in the Tyson patent results in bypassing by which stripping gas bubbles and catalyst particles do not sufficiently contact each other, thereby diminishing diffusion of the hydrocarbon from the catalyst into the stripping gas bubble. Hence, at higher catalyst flux rates, stripping efficiency over horizontal grates decreases. This is confirmed in the third paragraph of column 9 which states that the high end of the range of catalyst flux from the stripping section of the Tyson patent is about 1000 lbs./min./sq. ft. or higher which is equivalent to 60,000 lbs./hr./sq. ft. On the other hand, with sloped baffles with a few openings as presented in the Lomas patent, we determined as shown in the column marked "Conven. Baffle" in the table on page 34 of the subject application that as catalyst flux rates increase, the stripping efficiency of conventional baffles decreases. These conventional baffles correspond to the type of baffle displayed in the Lomas patent. Therefore, with horizontal baffles having openings spread out over the whole surface, high catalyst fluxes cannot be obtained or would provide poor stripping efficiency and with conventional sloped baffles with a few openings, stripping efficiency decreased with higher fluxes. However, we found that by spreading the openings over the whole surface of a sloped baffle as recited in the claims, stripping efficiency increased as catalyst flux increased. This can be seen from the column entitled "Modified Baffle" on page 34 of the subject application. This surprising discovery provided a two-fold advantage of increasing stripping efficiency while increasing the amount of catalyst that can be effectively stripped over a given period of time. Not only was this result not predicted in the Tyson patent nor in the Lomas patent, but the stripping baffles in these two patents provide decreasing catalyst stripping efficiencies with increasing catalyst fluxes, thereby teaching away from the superior results of the present invention.

Applicant respectfully submits that because there was no motivation to spread out the openings along a sloped baffle before Applicant's research and because no one of ordinary skill in the art could have expected the superior stripping efficiencies at higher

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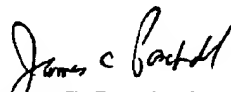
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flux rates provided by Applicant's invention, claims 1-27 of the subject application are patentable over the cited references.

The Office Action also maintained the rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting as being obvious over claim 2 of copending Application No. 09/877,981 (the "'981 application"). The claims in the '981 application have been allowed. Claim 2 of the '981 application depends from claim 1 which recites "the imperforate section of a subjacent one of said baffles being vertically aligned with the downcomer section of a superjacent one of said baffles and vertically unaligned with the downcomer section of said subjacent one of said baffles." The claims of the present invention have no such recitation and are therefore patentably distinct from claim 2 of the '981 application. Moreover, the Office Action provisionally rejected claims: 1-8 and 11-16 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 and 17-20 of copending Application No. 09/990,244 (the "'244 application"). Claim 1 in the '244 application recites "discharging a stripping fluid upwardly through said openings of said baffles, a volumetric flow rate of stripping fluid moving through the bottom section of said baffle being greater than a volumetric flow rate of stripping fluid moving through the top section of said baffle." Claim 17 of the '244 application similarly recites that the openings in a baffle "are distributed to provide a greater volumetric flow rate of stripping fluid to the lower section of the sloped baffle than to the upper section of the sloped baffle." The claims in the subject application have no such recitation related to the flow rate of stripping fluid through different parts of the baffle. Accordingly, Applicant respectfully submits that the claims of the '244 application are patentably distinct from the claims and the subject application. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the provisional rejections for obviousness-type double patenting.

Applicant respectfully requests reconsideration and allowance of all the claims 1-27 pending in the subject application. Should the Examiner have any questions regarding this matter, please feel free to call the undersigned.

Respectfully submitted,



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